



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: JEFFREY L. HUCKINS

Serial No.: 09/652,168

Filed: August 31, 2000

For: CLIENT MESSAGING IN
MULTICAST NETWORKS

§ Group Art Unit: 2154

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Examiner: Dustin Nguyen

Atty. Dkt. No.: ITL.0453US (P9661)

Mail Stop Appeal Brief-Patents
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P.O. Box 1450
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APPEAL BRIEF

Sir:

Applicant respectfully appeals from the final rejection mailed March 4, 2004.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee Intel Corporation, the assignee of the present application by virtue of the assignment recorded at Reel/Frame 011081/0543.

II. RELATED APPEALS AND INTERFERENCES

None.

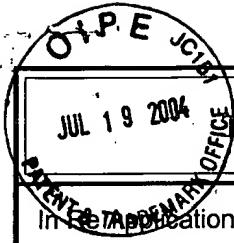
III. STATUS OF THE CLAIMS

The application was originally filed with claims 1-30. Claims 1-30 are pending. Claims 1-30 are the subject of this appeal.

Date of Deposit: July 15, 2004

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Jennifer Juarez



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AF/2154/\$

TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. ITL.0453US
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In Re Application Of: Jeffrey L. Huckins

Serial No. 09/652,168	Filing Date August 31, 2000	Examiner Dustin Nguyen	Group Art Unit 2154
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Invention: Client Messaging In Multicast Networks

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

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The fee for filing this Appeal Brief is: \$330.00

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- ☒ A check in the amount of the fee is enclosed.
- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 20-1504



Signature

Dated: July 15, 2004

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IV. STATUS OF AMENDMENTS

All Amendments previously presented by the Applicant have been entered as of the date of this Appeal.

V. SUMMARY OF THE INVENTION

Embodiments of the present invention relate to providing messages to clients in multicast networks. A multicast network may enable messages to be sent to target groups of clients that constitute a subset of all of the networked clients. *See* Specification, p. 1.

Referring to Figure 1, a network may include at least one server or head-end 10 and a plurality of clients 12 (only one of which is shown). The server 10 may be coupled to a plurality of clients (including the client 12) through a distribution system that may be based on a wired system or a wireless or broadcast system. Examples of such networks include television distribution networks such as digital video broadcasting systems.

In one embodiment of the present invention, the server 10 may communicate with the clients 12 over a transport 14. The transport 14 may be in accordance with an analog or digital broadcasting system. In accordance with embodiments of the present invention, the client 12 recognizes messages directed individually to that client 12 from the server 10 or in some embodiments, from other clients 12. Bandwidth may be conserved by addressing messages to a group of clients without the need to insert, within header, the individual identifiers of each of a large number of addressed clients.

In addition, the client 12 may include one or more addressable agents 44, 46 and 48 that may be independently addressed by remote units such as the server 10. Moreover, by providing addressable agents 44, 46 and 48 within a given client 12, messages that are specialized or which

need specialized handling may be addressed to particular agents resident on the client 12 for appropriate handling.

The server 10 may include a software download and update server 16. The server 16 is responsible for transmitting software or software updates to the client 12. The server 16 transmits messages which include a distinct service identifier. *See* Specification, pp. 2-4.

In accordance with one embodiment of the present invention, the server 10 may implement a unidirectional messaging system. In a unidirectional messaging system, the server 10 may transmit messages to a plurality of clients that are unable to respond in any way. In one embodiment of the invention, the server 10 may include a unidirectional messaging server (UMS) 22 that is coupled to the servers 16, 18 and 20 to generate messages in an appropriate format. The messages transmitted by the UMS server 22 may include messages originally generated by one of the servers 16, 18 or 20. The UMS server 22 may then be coupled to an Internet Protocol multicast module 24 that places the messages in an appropriate multicast protocol format. Finally, a DVB Multiprotocol Encapsulation (MPE) 26 is coupled to the Internet protocol multicast module 24. The output of the DVB MPE 26 and a DVB-Service Information (SI) generator 28 are coupled to the transport 14.

In the client 12, the stream from the DVB-SI generator 28 is coupled to a DVB-SI receiver 40 and service acquisition module 38. The service acquisition module 38 extracts a program identifier (PID) and provides it to a DVB demultiplexer 32. A tuner 30 may tune the client 12 to the appropriate channel corresponding to the extracted program identifier.

The message from the DVB MPE 26 is provided to a DVB MPE receiver 42. The receiver 42 communicates with an IP multicast module 40 and a unidirectional messaging server 38. The server 38 breaks down the message to determine whether a service identifier was

included in the data stream. If so, the message is forwarded to an appropriate agent designated to receive messages with particular service identifiers.

Thus, in one embodiment of the present invention, the software download and update server 16 may provide a specific message identifier that causes its message to be received by a software download agent 48 tuned to a particular service identifier. *See Specification, pp. 4-6.*

Turning next to Figure 2, software 50 on the client 12 initially receives the unidirectional messaging server address and port from the server 10. The client 12 may also be assigned a client identifier as indicated in block 52. Thus, an Internet Protocol multicast system may be established wherein each client has a UMS address and port as well as a unique client identifier, assigned by the server 10. In some embodiments, the server 10 may dynamically adjust addresses and ports as well as client identifiers to enable communication of particular messages, message groups or types of messages to particular clients in a dynamic and reconfigurable fashion.

Having received its address, port and client identifier, the client 12 receiver joins a multicast group and listens for messages addressed specifically to it or to any groups that the client 12 belongs to, as indicated in block 54.

A software download agent 48 registers its service identifier with the UMS server 38 as indicated in block 56. When the UMS server 38 receives a packet with a UMS message, as indicated in block 58, a check determines whether the particular client 12 is the intended recipient as indicated in diamond 60. If not, the message is discarded as indicated in block 62.

However, if the particular client 12 is the intended recipient, the server 38 checks the message's service identifier and passes the message to the correct agent 44, 46 or 48, as indicated in block 64. The message is then delivered to the appropriate agent 44, 46 or 48, as indicated in

block 66. In the agent, the information is parsed and passed to an appropriate process for handling as indicated in block 68. *See Specification, pp. 6-8.*

On the server side, shown in Figure 3, the network software 70 begins by assigning multicast addresses and ports for unidirectional messaging service to a plurality of clients 12 as indicated in block 72. The server 10 may also assign client identifiers in a dynamic and reconfigurable fashion. The address, port and client identifiers are then transmitted to the clients as indicated in block 74.

Thereafter, the software download and update server 16 may create a software version data structure and pass this data to the server 22 as indicated in block 76. The server 22 creates a unidirectional message and assigns a client value, sets a group flag, and copies private data in the private bytes of the message as indicated in block 78. *See Specification, p. 8.*

As indicated in block 80, the message is then sent to all the clients 12 on the network. Each client then determines whether the message is intended for that client. The client 12 determines whether it is the specific intended recipient by determining whether the message is addressed to the client identifier of the client 12. For example, using an AND logic operator between the message's identifier and the client's identifier, the client 12 may determine if the client 12 is within a group of clients jointly addressed by the server 10.

In one embodiment of the present invention, distinct groups of users may receive common client identifier elements. Thus, a plurality of clients whose owners have signed up for enhanced service may include a common code portion in their client identifier. When a message including that common code portion in the client identifier is received, each of those clients accepts the message. Likewise, clients in particular geographic areas, having particular interests or otherwise identifiable clients may be given unique prefixes/suffixes or identifier code

portions. The code portion may be logically ANDed with a group_mask to determine whether a particular client is a member of the targeted group. See Specification, pp. 9-10.

VI. ISSUES

- A. **Are Claims 1-3, 6-10, 13-14, and 27-29 Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell?**
- B. **Are Claims 4 and 11 Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell?**
- C. **Are Claims 5 and 12 Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell?**
- D. **Are Claims 15-16, 21-22, and 30 Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell?**
- E. **Are Claims 17-19 and 23-25 Patentable Under 35 U.S.C. §103(a) Over Kawano In View of Birdwell and In Further View of Fletcher?**
- F. **Are Claims 20 and 26 Patentable Under 35 U.S.C. §103(a) Over Kawano In View of Birdwell and In Further View of Fletcher?**

VII. GROUPING OF THE CLAIMS

For purposes of this appeal, the claims do not stand or fall together. For purposes of this appeal, Applicant has grouped together claims 1-3, 6-10, 13-14, and 27-29; claims 4 and 11; claims 5 and 12; claims 15-16, 21-22, and 30; claims 17-19 and 23-25; and claims 20 and 26, as set forth above.

VIII. ARGUMENT

- A. **Claims 1-3, 6-10, 13-14, and 27-29 Are Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell**

The method of claim 1 calls for assigning an individual identifier to a set of clients, assigning a group identifier to a subset of clients within the set, and enabling a first client in the set to determine whether a message is sent to the first client or to the subset. Claim 1 stands

rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,933,605 (Kawano) in view of U.S. Patent No. 6,108,706 (Birdwell). This rejection is improper, as Kawano and Birdwell in combination or individually fail to render claim 1 obvious.

Specifically, Kawano and Birdwell considered either in combination or alone do not teach or suggest that a first client in the set of clients is enabled to determine whether a message is sent to the first client or to the subset of clients within the set. The Examiner concedes that this limitation is not taught by Kawano. Final Office Action (dated March 4, 2004), p. 2. However, the Examiner contends that Birdwell teaches this element. Specifically, the Examiner refers to a portion of Birdwell that teaches that clients filter announcements according to predetermined criteria, keeping the announcements satisfying the criteria and discarding the rest. Birdwell, col. 6, ln. 33-col. 7, ln. 18. As such, a particular client is not enabled to determine whether a message is sent to this client or to the subset of clients within the set of clients. In other words, Birdwell does not determine anything with respect to an addressee of the message.

Instead, Birdwell simply teaches that all clients monitor announcements against criteria such as a type of transmission or attributes regarding content of a transmission. Birdwell, col. 6, lns. 37-43. Further, each client is merely concerned about the announcements in which it is interested, and there is no teaching or suggestion that a client is enabled to determine whether a message is sent to itself or to the subset of clients, i.e., to other clients of a set. Absent such a determination by a single client to whom the message is sent, the Examiner fails to make a *prima facie* case of obviousness of claim 1. Accordingly, claim 1 and claims 2-3 and 6-7 depending therefrom are patentable, and the rejection should be reversed. For similar reasons, claims 8-10, 13-14, and 27-29 are patentable and the rejection of those claims should also be reversed.

B. Claims 4 and 11 Are Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell

Claim 4 depends from claim 1 and further recites that assigning the individual identifier includes assigning a code portion that identifies a particular client as belonging to a subset of clients within the client set. Claim 4 stands rejected under U.S.C. §103(a) over Kawano in view of Birdwell. This rejection is improper, at least for the reasons discussed above regarding claim 1 (*see* VIII.A).

Claim 4 is further patentable as Kawano does not teach or suggest assigning an individual identifier having a code portion identifying a client as belonging to a subset. That is, neither of the portions of Kawano cited by the Examiner teach or suggest assignment of such a code portion. *See* Final Office Action, p. 3. Instead, Kawano merely teaches that a content code may be associated with data to indicate *a content of the data attached to the code*. Kawano, col. 1, lns. 40-53. However, such a teaching in no way either discloses or suggests assigning a code portion *to identify a particular client* as belonging to a subset of clients. Thus for this further reason, claim 4 is patentable and the rejection should be reversed. For similar reasons, claim 11 is patentable and the rejection should be reversed.

C. Claims 5 and 12 Are Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell

Claim 5 depends from claim 4 and further recites comparing a group identifier received with a message to an individual identifier to determine whether a particular client is within the addressed subset. Claim 5 stands rejected under 35 U.S.C. §103(a) over Kawano in view of Birdwell. This rejection is improper, at least for the reasons discussed above regarding claims 1 and 4 (*see* VIII.A and VIII.B).

The rejection is further improper, as the portion of Kawano contended to meet this element fails to teach or suggest comparing a group identifier to an individual identifier. Instead,

the portion of Kawano merely teaches that a content code received by a client may be checked for the presence of that content code in a contents code table. Kawano, col. 24, lns. 5-11. However, such a table in no way teaches or suggests either group identifiers or an individual identifier, use of which is to determine whether a particular client is within an addressed subset. Accordingly, for this further reason claim 5 is patentable and the rejection should be reversed. For similar reasons, the rejection of claim 12 should be reversed.

D. Claims 15-16, 21-22, and 30 Are Patentable Under 35 U.S.C. 103(a) Over Kawano In View of Birdwell

Independent claim 15 calls for a method including providing at least two agents on a client, assigning a different address to each of the agents, and determining whether a message received by the client is addressed to one of the agents. Claim 15 stands rejected under 35 U.S.C. §103(a) over Kawano in view of Birdwell. This rejection is improper, as neither Kawano or Birdwell teach or suggest at least two agents on a client, nor determining whether a message received by the client is addressed to one of the two agents.

In this regard, neither Kawano nor Birdwell provide for at least two agents on a client, as claimed in claim 15. The Examiner relies on column 8, lines 27-44 in Kawano to teach providing at least two agents on a client. Final Office Action, p. 4. However, this cited portion of Kawano merely discloses that multiple ports are each given a different address so that a transmission controller can perform frame transmitting or receiving operations. In contrast, Applicant's Specification describes that "an agent" is an entity that is "designated to receive messages with particular service identifiers." Applicant's Specification, page 6, lines 4-5. Thus, the mere ports of Kawano are not different agents that receive messages with particular service identifiers. For at least this reason, claim 15 is patentable over the proposed combination.

Claim 15 is further patentable for the independent reason that neither reference teaches or suggests determining whether a message received by the client is addressed to one of the agents. In this regard, the Examiner purports to rely on Birdwell for such a teaching. Final Office Action, p. 5. However, in column 6, lines 33-61 of Birdwell, a client monitors a multicast address and destination port to receive multicast packets containing announcements. Birdwell teaches that it is the announcement itself that is parsed against predetermined (i.e., content) criteria. There is simply no teaching or suggestion as to whether a message received by the client is addressed to one of the two agents, as claimed in claim 15. Accordingly, for this further reason claim 15 and claim 16 are patentable and the rejection should be reversed. For similar reasons, claims 21-22 and 30 are patentable and the rejection should be reversed.

E. Claims 17-19 and 23-25 Are Patentable Under 35 U.S.C. §103(a) Over Kawano In View of Birdwell and In Further View of Fletcher

Claim 17 depends from claim 16 and further recites sending messages to a client that includes software and messages that do not include software. Claim 17 stands rejected under 35 U.S.C. §103(a) over Kawano in view of Birdwell and further in view of U.S. Patent No. 6,009,274 (Fletcher). This rejection is improper, at least for the reasons discussed above regarding claim 15 (*see* VIII.D). This is so, as Fletcher adds nothing with respect to the missing elements of claim 15. Accordingly, for at least these reasons, claim 17 and claims 18 and 19 depending therefrom are patentable and the rejection should be reversed. For similar reasons, the rejection of claims 23-25 should be reversed.

F. Claims 20 and 26 Are Patentable Under 35 U.S.C. §103(a) Over Kawano In View of Birdwell and In Further View of Fletcher

Claim 20 depends from claim 15 and further recites assigning an individual identifier to clients in a set of clients, assigning a group identifier to a subset of the clients, and enabling a first client to determine whether a message is sent to it or the subset. Claim 20 stands rejected

under 35 U.S.C. §103(a) over Kawano in view of Birdwell and in further view of Fletcher. This rejection is improper, at least for the reasons discussed above regarding claim 15, from which it depends (*see* VIII.D).


The rejection of claim 20 is further improper for the reasons discussed above regarding claim 1 (*see* VIII.A), as none of the cited references teach or suggest enabling a first client to determine whether a message is sent to it or to a subset of clients. Accordingly, claim 20 and, for the same reason, claim 26 are patentable and the rejection should be reversed.

IX. CONCLUSION

Since the rejections of the claims are baseless, they should be reversed.

Respectfully submitted,

Date: 7/15/04

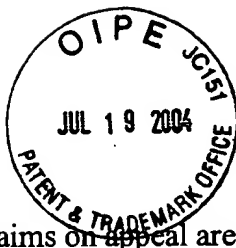


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APPENDIX OF CLAIMS

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The claims on appeal are:

1. A method comprising:

assigning an individual identifier to a set of clients;

assigning a group identifier to a subset of clients within the set of clients; and

enabling a first client in said set to determine whether a message is sent to the first client
or to the subset.
2. The method of claim 1 further including sending a single message to a subset of
said clients.
3. The method of claim 1 including sending television content to a plurality of
clients.
4. The method of claim 1 wherein assigning an individual identifier includes
assigning a code portion that identifies a particular client as belonging to a subset of clients
within the set of clients.
5. The method of claim 4 including comparing a group identifier, received by a
client with a message, to the client's individual identifier to determine whether the particular
client is within the addressed subset.
6. The method of claim 1 including addressing the same message to a subset of
clients.
7. The method of claim 1 including sending a message to a client in a unidirectional
messaging system.

8. An article comprising a medium storing instructions that enable a processor-based system to:

assign an individual identifier to a set of clients;

assign a group identifier to a subset of clients within the set of clients; and

enable a first client in said set to determine whether a message is sent to the first client or to the subset.

9. The article of claim 8 further storing instructions that enable the processor-based system to send a single message to a subset of said clients.

10. The article of claim 8 further storing instructions that enable the processor-based system to send television content to a plurality of clients.

11. The article of claim 8 further storing instructions that enable the processor-based system to assign a code portion that identifies a particular client as belonging to a subset of clients within the set of clients.

12. The article of claim 11 further storing instructions that enable the processor-based system to compare a group identifier, received by a client with a message, to the client's individual identifier to determine whether the client is within the address subset.

13. The article of claim 8 further storing instructions that enable the processor-based system to address the same message to a subset of clients.

14. The article of claim 8 further storing instructions that enable the processor-based system to send a message to a client in a unidirectional messaging system.

15. A method comprising:
- providing at least two agents on a client;
- assigning a different address to each of said agents; and
- determining whether a message received by said client is addressed to one of said agents.
16. The method of claim 15 including sending at least two different types of messages to said client.
17. The method of claim 16 including sending messages including software and messages not including software.
18. The method of claim 17 including assigning different addresses to messages to a client that include software and messages that do not include software.
19. The method of claim 18 including addressing messages including software to an agent on the client that is adapted to handle the downloading of software.
20. The method of claim 15 including assigning an individual identifier to the clients comprising a set of clients, assigning a group identifier to a subset of the clients within the set of clients, and enabling a first client in said set to determine whether a message is sent to the first client or the subset.
21. An article comprising a medium storing instructions that enable a processor-based system to:
- provide at least two agents on a client;
- assign a different address to each of said agents; and
- determine whether a message received by said client is addressed to one of said agents.

22. The article of claim 21 further storing instructions that enable the processor-based system to send at least two different types of messages to said client.

23. The article of claim 22 further storing instructions that enable the processor-based system to send messages including messages including software and messages not including software.

24. The article of claim 23 further storing instructions that enable the processor-based system to assign different addresses to messages to a client that include software and messages that do not include software.

25. The article of claim 24 further storing instructions that enable the processor-based system to address messages including software to an agent on the client, said agent adapted to handle the downloading of software.

26. The article of claim 21 further storing instructions that enable the processor-based system to assign an individual identifier to the clients comprising a set of clients, assign a group identifier to a subset of the clients within the set of clients and enable a first client in the first set to determine whether a message is sent to the first client or the subset.

27. A system comprising:

a processor-based device; and

a storage coupled to said device, said storage storing instructions that enable the processor-based device to assign an individual identifier to a set of clients, assign a group identifier to a subset of the clients within the set of clients and enable a first client in said set to determine whether a message is sent to the first client or to the subset.

28. The system of claim 27 wherein said system distributes television content to a plurality of clients.

29. The system of claim 27 including a comparator that compares a group identifier, received by a client with a message, to the client's individual identifier to determine whether the particular client is within the addressed subset.

30. A system comprising:

a processor-based device; and

a storage coupled to said device storing instructions that enable the processor-based device to handle at least two agents on a client, assign a different address to each of said agents and determine whether a message received by the client is addressed to one of said agents.